

## **AMENDMENTS TO THE CLAIMS**

**This listing of claims will replace all prior versions and listings of claims in the application:**

### **LISTING OF CLAIMS:**

1. (Original) Device for the signal processing in a hearing aid, comprising a filter for the frequency-dependent amplitude adaptation of an input signal and means for the adaptation of coefficients of this filter in accordance with the input signal,  
wherein the device comprises  
a means for determining coefficients of a compression amplification  $g_m$ , which coefficients describe a frequency-dependent adaptation of the input signal in accordance with frequency-dependent signal levels  $x_n$  of the input signal ,  
a means for determining coefficients of a noise suppression  $a_m$ , which coefficients describe a frequency-dependent adaptation of the input signal in accordance with interference noises detected in the input signal ,  
wherein the means for the adaptation of coefficients of the filter establishes these coefficients from the coefficients of the compression amplification  $g_m$  and the coefficients of the noise suppression  $a_m$ .
2. (Original) Device in accordance with claim 1, wherein the means for determining coefficients of the compression amplification  $g_m$  comprises a means for determining signal levels  $p_n$  in a first number of frequency ranges  $F_n$  with  $n=1..N$  of the input signal and a means for determining the coefficients  $g_m$  for the compression amplification for each one of a second number of frequency ranges  $\Phi_m$  with  $m=1..M$  of the input signal as function of an optionally modified signal level  $p_n$  assigned to the frequency range  $\Phi_m$ .

3. (Original) Device according to claim 2, wherein the means for determining signal levels  $p_n$  forms these iteratively as momentary effective values of a signal power in the corresponding frequency range  $F_n$ .
4. (Original) Device in accordance with claim 1, wherein the means for determining coefficients of the noise suppression  $a_m$  comprises means for determining modulation depths  $d_m$  in a second number of frequency ranges  $\Phi_m$  with  $m=1..M$  of the input signal and a means for determining the coefficients  $a_m$  for the noise suppression for each of the frequency ranges  $\Phi_m$  of the input signal in accordance with the corresponding modulation depths  $d_m$ .
5. (Original) Device according to claim 2, wherein  $N < M$  applies and at least one of the frequency ranges  $F_n$  for the compression amplification comprises at least two of the frequency ranges  $\Phi_m$  for the noise suppression.
6. (Original) Device in accordance with claim 5, wherein the signal processing for the compression amplification is designed to determine each coefficient  $g_m$  for the compression amplification respectively as  $g_m = f_m(p_n)$ , wherein  $p_n$  is the optionally modified signal level of that frequency range  $F_n$  for the compression amplification which comprises the frequency range  $\Phi_m$  for the noise suppression, and  $f_m$  is one of  $M$  functions, which in their totality determine a frequency-dependent compression amplification.
7. (Original) Device according to claim 6, wherein the coefficients  $a_m$  and  $g_m$  being combined with one another are logarithmically scaled and their combination by subtraction forms a combined logarithmic amplification value  $c_m = g_m - a_m$ .

8. (Original) Device in accordance with claim 1, wherein the means for the adaptation of coefficients of the filter is designed to adapt not all, but only selected coefficients at predefined time intervals.
9. (Original) Device in accordance with claim 1, comprising means for the correction of the compression amplification by modification of the signal levels  $p_n$  in accordance with the noise suppression.
10. (Currently amended) Method for the signal processing in a hearing aid, in which coefficients of a filter for the frequency-dependent amplitude adaptation of an input signal are adapted in accordance with this input signal, wherein the method comprises the following steps:
  - Determining coefficients of a compression amplification  $g_m$ , which describe a frequency-dependent adaptation of the input signal in accordance with frequency-dependent signal levels of the input signal,
  - determining coefficients of a noise suppression  $a_m$ , which describe a frequency-dependent adaptation of the input signal in accordance with interfering noises detected in the input signal, and
  - ~~the calculation of~~ calculating the coefficients of the filter out of the coefficients of the compression amplification  $g_m$  and the coefficients  $a_m$  of the noise suppression.
11. (Original) Method according to claim 10, wherein for determining coefficients of the compression amplification  $g_m$  in a first number of frequency ranges  $F_n$  respectively assigned signal levels  $p_n$  with  $n=1..N$  of the input signal are determined, and the coefficients of the compression amplification  $g_m$  for each one of a second number of frequency ranges  $\Phi_m$  with  $m=1..M$  of the input signal are determined as function of a signal level  $p_n$  assigned to the frequency range  $\Phi_m$ .

12. (Original) Method in accordance with claim 11, wherein a signal level  $p_n$  is iteratively calculated respectively as momentary effective value of a signal power in the corresponding frequency range  $F_n$ .
13. (Original) Method according to claim 10, wherein for determining coefficients of the noise suppression  $a_m$  in a second number of frequency ranges  $\Phi_m$  with  $m=1..M$  of the input signal modulation depths  $d_m$  are determined and the coefficients  $a_m$  are determined for each one of the frequency ranges  $\Phi_m$  in accordance with the corresponding modulation depth  $d_m$ , wherein the modulation depths  $d_m$  are determined from a time-dependent sequence of maximum values and minimum values of a signal level  $p_m$  in the respective frequency range  $\Phi_m$ , and the signal level  $p_m$  is formed in a in a frequency range  $\Phi_m$  as effective value of the signal power in the corresponding frequency range  $\Phi_m$ .
14. (Original) Method in accordance with claim 13, wherein for every modulation depth  $d_m$ , which exceeds a predefined value, the assigned coefficient  $a_m$  is zero, and for values of the modulation depth  $d_m$  below the predefined value, the coefficient  $a_m$  increases monotonically with declining modulation depth  $d_m$ .
15. (Original) Method accordance with claim 10, wherein at least one of the frequency ranges  $F_n$  for the compression amplification comprises at least two of the frequency ranges  $\Phi_m$  for the noise suppression, and every coefficient  $g_m$  for the compression amplification is determined respectively as  $g_m = f_m(p_n)$ , wherein  $p_n$  is the signal level of that frequency range  $F_n$  for the compression amplification, which comprises the frequency range  $\Phi_m$  for the noise suppression, and  $f_m$  is one of  $M$  functions, which in their totality determine a frequency-independent compression amplification, and wherein the coefficients  $a_m$  and  $g_m$  are logarithmically scaled and their combination by subtraction forms a combined logarithmic amplification value  $c_m = g_m - a_m$ .

16. (Original) Method in accordance with claim 10, wherein the coefficients of the filter are updated at regular time intervals, wherein, however, during each updating not all, but only a few of the coefficients updated, in particular only those coefficients, the changes of which are the greatest or exceed a predefined value.
17. (Original) Method according to claim 16, wherein the combined coefficients of the filter (6)  $c_m$  in the filter (6) are transformed into linear values  $\gamma_m$  and an iterative, frequency-specific updating of a transmission function of the filter in accordance with  $H(z)[k] = H(z)[k-1] + \Sigma_m (\gamma_m[k] - \gamma_m[\kappa_m]) \cdot H_m(z)$  takes place, wherein  $H_m(z)$  only in the frequency range  $\Phi_m$  comprises a pass characteristic and otherwise a blocking characteristic,  $\kappa_m$  designates a sampling interval, in which the transmission function for the frequency range  $\Phi_m$  has been updated the last time, and a Summation  $\Sigma_m$  in a sampling interval  $k$  respectively only comprises one or some few of the overall  $M$  frequency ranges.
18. (Original) Method in accordance with claim 10, wherein the step of determining coefficients of the compression amplification  $g_m$  takes into consideration the values of the coefficients of the noise suppression  $a_m$ .
19. (Original) Method according to claim 18, wherein the coefficients of the compression amplification are determined from modified signal levels  $p_n'$  instead of the signal levels  $p_n$ , wherein  $p_n' = p_n - r_n$  applies, and  $r_n$  are logarithmically scaled correction values, which correspond to a signal attenuation caused by the noise suppression.
20. (Original) A hearing aid, comprising means for the implementation of the method in accordance with claim 10.